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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,880	12/19/2001	John Guzek	42390P13271	1290

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EXAMINER

TRAN, LONG K

ART UNIT PAPER NUMBER

2818

DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/033,880

Applicant(s)

GUZEK ET AL.

Examiner

Long K. Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Amdt on March 08, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8 - 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8,9,11,12 and 14 is/are rejected.
- 7) ☒ Claim(s) 10,13 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to Amendment filed on March 08, 2004.
2. Claims **1 – 7** and **16 – 20** have been cancelled.
3. Claims **8 – 15** are presented for examination.

### ***Claim Objections***

4. Claims **10, 11, 13, 14** and **15** are objected to because of the following informalities: Change "wherein at least one other of" to -- the other of -- . Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims **9** and **12** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims **9** and **12**: Examiner is unclear that how can an input and output signals of the IC can be routed through the electrically isolated region that is coupled with the digital ground of the IC? Is there a short-circuit between the I/O signals and the digital ground? Clarification is required.

Claim **12**, lines 4 – 7, " wherein at least one of the electrically isolated regions of the metal substrate core is coupled with a digital ground of an integrated circuit chip and

has input and output signals routed through it" what does applicant means of " it "?

What does " it " refer to? Clarification is required

***Claim Rejections - 35 USC § 103***

7. Claims **8, 9, 11, 12** and **14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gandhi et al. (US Patent No. 6,085,415) in view of Khoini-Poorfard et al. (US Patent No. 6,121,827).

Regarding claims **8, 9, 11, 12** and **14**, figures 7 – 17 illustrate a metal substrate 10 for electronics packaging (abstract, col. 6, lines 32 – 36) including a first region, and a second region electrically isolated from the first region by insulating 25 and 26 (claim 1). It is notice that the metal substrate core taught by Gandhi et al. is "inherently included power or ground planes" (col. 3, lines 35 – 43). Gandhi et al. do not explicitly teach at least one of the regions of the substrate core is coupled with digital ground of an integrated circuit; illustrate at least one of the regions of the substrate core is coupled with analog ground of an integrated circuit chip.

However, Khoini-Poorfard et al. disclose IC chip (fig. 2, 42) located in a package (fig. 2, 44) and within the IC chip (fig. 2, 42), there exists analog circuitry (fig. 2, 48) and digital circuitry (fig. 2, 50); the digital circuitry is capable of modeling a digital current source and has a digital ground (fig. 2, 56); and both digital ground (fig. 2, 56) and analog ground (fig. 2, 54) are physically coupled to the substrate (column 3, lines 37 +).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an IC device of Gandhi et al. with an IC device as taught by

Khoini-Poorfard et al. in order to effectively dissipate heat generated so it does not affect the module performance and life span.

***Allowable Subject Matter***

8. Claims **10, 13** and **15** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is an examiner's statement of reasons for the indication of allowable subject matter: Claims **10, 13** and **15** are allowable over the prior art of record because none of the prior art whether taken singularly or in combination, especially when these limitations are considered within the specific combination claimed, to teach:

One electrically isolated regions of metal substrate core is coupled with an operating rail of the IC chip as cited in claims 10, 13 and 15.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long K. Tran whose telephone number is 571-272-1797. The examiner can normally be reached on Mon-Thu.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Long Tran

May 14, 2004

  
David Nelms  
Supervisory Patent Examiner  
Technology Center 2800